



## LETTER TO THE EDITOR

## Comment on ‘extension gap needs more than 1-mm laxity after implantation to avoid post-operative flexion contracture in total knee arthroplasty’

Harun R. Gungor<sup>1</sup> · Nusret Ok<sup>1</sup>Received: 17 January 2015 / Accepted: 2 March 2015 / Published online: 11 March 2015  
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Dear Editor,

We read the article with great interest published at your journal in Vol. 22, No.5 (2014) written by Okamoto et al. [3]. We would like to congratulate them for their inspiring work.

The authors measured the extension gap using offset-type tension device set at 176.4 N and divided patients into three groups according to the medial component gap to investigate the relationship between the intra-operative laxity at the medial component gap and post-operative flexion contracture: Group I, medial component gap was more than 1 mm; Group II, gap was between 0 and 1 mm; and Group III, gap was <0 mm. As a result, they concluded that the rate of residual flexion contracture in Group III was significantly greater than that in Group I. However, assuming that selected joint distraction force corresponded most closely to the insert thickness as authors stated, full correction of a flexion contracture could not be achieved at the time of the initial TKA in Group III by selecting corresponding insert thickness which was bigger than the measured extension gap. It has already been a well-known entity that high tension of the soft tissue in extension during operation generates extension deficit, and this deformity should be corrected at the time of the index procedure [2, 5]. Therefore,

comparing Groups I and II with Group III showing a gap <0 mm that should have been corrected during the index procedure is inappropriate. Authors also reported that residual flexion contractures in all groups significantly improved from post-operative 1 month to 1 year, and there were no differences among groups in post-operative Knee Society pain scores at the end of first year. However, this has not been proven to be predictable, and leaving residual flexion contractures is thought to be a functional impairment in the literature [4]. Another point is that, 59 patients with varus osteoarthritis were included in the study, and 16 patients had bilateral operations. A limb-length difference with the side of the total knee arthroplasty being longer and resulting in a flexed-knee posture may cause flexion contracture in the operated side if preventive measures are not taken appropriately [1]. Therefore, to which group these bilaterally operated patients belongs to, whether they were operated simultaneously or staged, and whether there was statistically significant difference between groups about this should have been emphasised within the report. Finally, we want to point out that although a gradual improvement in flexion deficit can be expected up to 2 years and a small residual flexion contracture should not cause functional deficit, this has not been proven to be predictable and any extension deficit should be corrected during the index procedure [1, 2, 4, 5].

✉ Harun R. Gungor  
hrgungor@gmail.com  
Nusret Ok  
oknusret@gmail.com

<sup>1</sup> Orthopedics and Traumatology Department, Medical Faculty, Pamukkale University, 20070 Kinikli, Denizli, Turkey

### References

1. Bhavé A, Mont M, Tennis S, Nickey M, Starr R, Etienne G (2005) Functional problems and treatment solutions after total hip and knee joint arthroplasty. *J Bone Joint Surg Am* 87:9–21
2. Fehring TK, Odum SM, Griffin WL, McCoy TH, Masonis JL (2007) Surgical treatment of flexion contractures after total knee arthroplasty. *J Arthroplasty* 22:62–66

3. Okamoto S, Okazaki K, Mitsuyasu H, Matsuda S, Mizu-uchi H, Hamai S, Tashiro Y, Iwamoto Y (2014) Extension gap needs more than 1-mm laxity after implantation to avoid post-operative flexion contracture in total knee arthroplasty. *Knee Surg Sports Traumatol Arthrosc* 22:3174–3180
4. Quah C, Swamy G, Lewis J, Kendrew J, Badhe N (2012) Fixed flexion deformity following total knee arthroplasty. A prospective study of the natural history. *Knee* 19:519–521
5. Scuderi GR, Kochhar T (2007) Management of Flexion Contracture in Total Knee Arthroplasty. *J Arthroplasty* 22:20–24